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Remarks/Arguments

Claims 1-13 and 15-82 are pending in the application. Claims 1-13 and 15-82 are rejected.

Background

The present invention addresses the following problem: "What combination of content elements should be presented to a user to influence user behaviour or to help achieve a desired outcome, for example to maximize the chances of securing a sale of a particular product or service to the user?"

This problem is particularly challenging due to the complexity that arises from the large number of combinations that can be derived from a relative small number of content elements. In the case of an interactive advertisement, if there were four options for the background color, four options for the message, four options for the product featured, four options for the discount offered and four options for the layout, there would be 1,024 distinct advertisements that could be created from these content elements. If there were ten options each with four variations, then there would be over one million ads that could be created.

The current invention solves the problem of generating the necessary ad variations according to systematic experiment rules and of determining from this myriad of combinations of content elements, which one is optimal for an objective, such as a sale for different groups of customers.

The solution to this problem is to generate experiments that are able to isolate the relationship between different combinations of content elements and customers' behaviour such as a sale. In certain claimed embodiments, the invention uses 'causal' analysis to uncover the

relationships between particular content elements and combinations of elements and desired business outcomes.

To implement online experiments, considerable precision and accuracy are required in both:

1. The structuring and variation of content elements in accordance with rules.
2. The allocation of those variations to users customers in accordance with other rules based on sampling theory.

The claimed invention recites novel features that meet these requirements.

Rejections Under § 102(e) Based on Herz

Applicant submits that all pending claims readily distinguish over the prior art of record, including the Herz reference, and reconsideration is respectfully requested in view of the following remarks.

There is gulf between the manner in which the Applicant is interpreting the claims and the manner that the Examiner has interpreted them, resulting in the present rejections. Applicant respectfully submits that the interpretation by the Examiner is clearly erroneous because it is not in accord with the legal precedent that controls all claim interpretations at the PTO level. While the claims can be distinguished over the prior art in various ways, Applicant will focus on fundamental distinctions relating to the terms "content", "content elements", and "treatment", which are recited directly or indirectly in the claims.

In interpreting claims, "[a]lthough the PTO must give claims their broadest reasonable interpretation, this interpretation must be consistent with the one that those skilled in the art would reach"; see also MPEP § 2111.01 ("[T]he words of a claim ... must be read as they would be interpreted by those of ordinary skill in the art.") Further, "[a]ll words in a claim must be

considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

How persons skilled in the art would interpret the claims is clear in consideration of the definitions from the specification and context of use:

Content

- "Content 15 can be any data or information that is presentable (visually, audibly, or otherwise) to users 16". (p. 8, lines 3-5.)
- Figure 2 shows content as a discrete item in a content system 10 storing a plurality of units of content 15.
- The present application gives examples of content 15; a web page is one such an example. (pp. 8-9)

Content Elements

"Content 15, which can be stored in digital form, may be broken down or reduced to a set of elemental components. An elemental component can be, for example, a text file, an image file, an audio file, a video file, etc." (p. 8, line 27-p, 9, lines 1-9.)

Treatment

- A treatment is based on a set of content elements:

~~These elemental components [of content 15] may be combined and/or formatted~~
in a number of different ways or structures for presenting content 15 to users 16.
Each separate combination and/or formatting of content 15 constitutes a content structure or treatment. A content structure can be, for example, a particular implementation of a web page at a given moment. More specifically, at the given instance of time, the web page may contain particular text, icons, images, and/or video located at particular positions on the screen, particular visual background shading or color, particular borders for dividing up the screen, particular audio (music or speech), and the like.

(p. 8, line 27-p, 9, lines 1-9.)

- A web page is given as an example of content 15 with elements for use in creating treatments in the nature of particular text, icons, images and/or video located at particular positions on the screen. (pp. 8-9.)

- Through-out the specification, the invention is described in terms of defining an item of content 15 into its content elements and creating treatments based on the elements.

From the foregoing, persons skilled in the art will readily appreciate that content comprises a set of content elements. In other words, the content elements recited in the claims form an item of content 15. The present invention generates experiments of presenting users various combinations of content elements called treatments. There is no ambiguity in Applicant's specification that "treatment" means anything other than as defined above or that a broader interpretation is intended. Nor is there any evidence of record that persons skilled in the art would assume a different meaning in view of Applicant's specification. If the Examiner feels a different interpretation would be reached by persons skilled in the art, then the Examiner must submit the evidence or a declaration.

Turning now to consideration of Herz, content 15 best corresponds to a "target object" in Herz. Herz defines a target object "an object available for access, by the user..." (Col. 4, lines 50-52.) Herz gives examples of target objects as newspaper articles, movies, books, product and service denoted on electronic media. (Col. 6, lines 3-12; Col 79, line 66 to Col. 80, line 5.) Herz teaches that each target object is associated with a unique file, which might have combinations of data types. (Col. 29, lines 34-53.) Herz neither teaches nor suggests that any target object, i.e., content 15, can or should be broken into a set of content elements for presentation to users in various combinations (treatments). Nor does Herz teach or suggest the target objects are presented in various combinations derived from a set of elements (treatments) for a larger target object.

By specifying a set of content elements and conducting combinatorial experiments with a set of elements, the present invention teaches how user behavior may be influenced relative to a particular treatment. For example, one of the various treatments created from the set of

content elements may be determined to influence a user to purchase something on the web page (content 15) more than another treatment based on a treatment having a different factorial combination of elements. Herz teaches only what target objects to deliver to a user and says nothing about how any particular target object can be decomposed into elements for experimentation and ultimately for influencing user behavior.

Notably, each rejection only vaguely references "treatment" and it is entirely unclear how what is cited as a treatment could reasonably correspond to the claimed treatment. This is demonstrated in attached Appendix A, which is a chart, which for each claim: (1) identifies the passage in Herz is supposed to correspond to a treatment, and (2) comments on how the passage does not in fact disclose a "treatment". Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration. Each "ground of rejection [needs to be] fully and clearly stated." MPEP § 707.07(d). Applicant can only speculate as to how the cited passages disclose a treatment within the meaning of the claims, as discussed above.

The Examiner must show not only that each element or limitation of the claims is present in the cited prior art, but also that the elements or limitations are present in the prior art as arranged in the claims. *Lindermann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing *Connell v. Sears Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added). In all rejections, the Examiner has considered "target object" to correspond to both "set of content elements" and to "various treatments for a set of content elements". All independent claims contemplate that (1) there is a set of content elements, which, as clearly defined, means subcomponents of an item of content 15; and (2) there are a plurality of various treatments for the recited set of content elements. The word "for" establishes a specific relationship between the set and the treatments:

the treatments are based on the antecedent set. No rejection in the Office Action identifies specifically what is considered in the claimed "set of content elements" and what is considered the "various treatments for the set of content elements". In all rejections, the target objects are considered to correspond to both the set of content elements and the treatments. However, not in one instance has it been established that there is a plurality of treatments for a single set of content elements, i.e., a set of subcomponents of an item of content 15, as claimed. Therefore, the rejection of all independent claims and all dependent claims is traversed because the claimed relationship of a set of content elements on which a various or a plurality of treatments are based is not disclosed. Further, "experiment" has, or will have in view of the specification, a particular meaning to persons skilled in the art. Throughout the specification "experiment" refers to combinatorial experiments based on various treatments and monitoring user behavior. Herz does not disclose any form of combinatorial experiments, only monitoring user reaction to different target objects outside the context of combinatorial experiments. The specification clearly teaches that "experiment" means combinatorial, and it is not reasonable to suggest that a broader interpretation reaching the monitoring system of Herz is reasonable. For

example, combinatorial experiments are described in Applicant's specification as follows:

- "Experimentation is used for testing new or different ideas...During experimentation, a number of alternate ideas or approaches may be provided to various test subjects and the results observed." (p. 1, lines 14-18.)
- "The experiment created and executed...may include full factorial experiments and designed functions of full factorial experiments" (p. 16, lines 18-22).
- "As the number of variables in an experiment are increased linearly...the number of combinations of content elements increases exponentially" (p. 17, lines 19-21).
- "Designed experiments reduces the number of combinations required for experimentation..." (p. 17, lines 32-33).
- All other references to "experiment" are consistent with the combinatorial approach of creating and presenting treatments; are ubiquitous.

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Accordingly the term "experiment" has a particular meaning that in view of the specification will be readily appreciated by persons skilled in the art. Because Herz does not disclose an experiment, as claimed, claims 1, 15, 24, 36, 40, 43, 51, 72, 78, 79, 80, 81 and the direct or indirect dependent claims thereto, are allowable for at least this reason.

Rejections Under § 102(e) Based on Literature References

Claims 1 and 15 stand rejected under § 102(e) based on the Dreze and Svensson. The references cited by the Examiner against claims 1 and 15 are literature references. A rejection premised on Section 102(e) is valid only for a patent prior art reference, not literature prior art references. Therefore, Applicant unable to understand or respond to the rejections without speculation as to what is the precise statutory ground for the rejection or whether the erroneous rejection was in fact intended by the Examiner. Accordingly, the rejection stands traversed as not establishing statutory grounds for the rejection.

"All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson, supra*. The rejections of claims 1 and 15 would not meet this standard, and therefore the stated reasons for the rejections could not support a prima facie rejection. For example, claims 1 and 15 each recite an automated system or method and the Examiner has not identified anything in the cited references that corresponds to the limitation of "automated". Nor do the rejections identify what in the cited references is considered the communication management system or the allocator module, as defined in the specification. The rejections are traversed for these additional reasons.

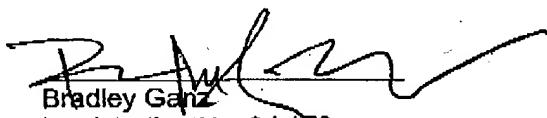
In view of the foregoing reasons for distinguishing over the cited references, Applicant has not raised other possible grounds for traversing the rejections, and therefore nothing herein should be deemed as acquiescence in any rejection or waiver of arguments not expressed herein.

CONCLUSION

Applicant submits that in view of the foregoing remarks and/or arguments, the application is in condition for allowance, and favorable action is respectfully requested. The Commissioner is hereby authorized to charge any fees, including extension fees, which may be required, or credit any overpayments, to Deposit Account No. 50-1001.

Respectfully submitted,

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APPENDIX A*

**Claims are presented in the same order presented in the Office Action*

Claim	Cited Passage in Herz (Column/line)	Comments
15	31/59-32/2	<ul style="list-style-type: none"> • Passage says that that data can be collected about users and target objects. • No teaching or suggestion that this is done on the elemental content level of target objects or that the target objects are permutative elements of a larger target object. • Therefore this passage does not relate to a treatment as defined in application's specification and claims. • The rejections of claim 15 and its direct and indirect dependent claims are traversed for at least this reason.
16	18/28-51; 17/30-33	<ul style="list-style-type: none"> • The passage describes presenting target object such as news articles of interest to a user. • No teaching or suggestion that this is done on the elemental content level of target objects. • Therefore, this passage does not relate to a treatment, and the rejections of claim 16 and its direct and indirect dependent claims are traversed for at least this reason.
17	21/47-49; 21/61-22/5	<ul style="list-style-type: none"> • The passages

		describe target objects. There is no teaching or suggestion that target objects are broken into elemental components or that the target objects are elements of a larger target object. The comments above apply.
18	6/15-20	<ul style="list-style-type: none"> The passage describes target objects. There is no teaching or suggestion that target objects are broken into elemental components or that the target objects are elements of a larger target object. The comments above apply.
19	5/13-22	<ul style="list-style-type: none"> Same as above.
20	58/55-59/8; 48/1-8; 17/43-18/27	<ul style="list-style-type: none"> Same as above.
21	Same as claim 10.	<ul style="list-style-type: none"> Same as claim 10.
22	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 20 and patentable for same reason.
23	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 15 and patentable for at least the same reason.
1	17/30-18/27	<ul style="list-style-type: none"> Same as claim 15 The Examiner's rejection, without explanation, equates delivering data in Herz as the same as the claimed "treatment". However, as explained in Applicant's remarks, "treatment" is a defined term for which there is no equivalent in Herz.

2	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 1 and patentable for at least the same reason.
3	6/15-20	<ul style="list-style-type: none"> Same passage cited against claim 18; same comments.
4	31/59-32/2; 18/25-27	<ul style="list-style-type: none"> Same passages and comments as for claims 1 and 15.
5	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 1 and patentable for at least the same reason.
6	6/15-20; 5/16-22	<ul style="list-style-type: none"> Same passages cited against claims 18 and 19; same comments.
7	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 1 and patentable for at least the same reason.
8	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 1 and patentable for at least the same reason.
9	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 1 and patentable for at least the same reason.
10	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 1 and patentable for at least the same reason.
11	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 1 and patentable for the at least same reason.
12	18/32-40; 5/32-48	<ul style="list-style-type: none"> In part same as claim 16, the passage in column 5 is not more relevant. Same comments as for claim 16.
13	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 1 and patentable for at least the same reason.
24	Same as claims 1 and 15.	<ul style="list-style-type: none"> Same as claims 1 and 15
25-27	Same as claims 2-3 and 12.	<ul style="list-style-type: none"> Same as claims 2-3 and 12
28	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 24 and patentable for at least the same

		reason.
29	Same as claim 18.	<ul style="list-style-type: none"> Same as claim 18.
30	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 24 and patentable for at least the same reason.
31	Same as claim 17.	<ul style="list-style-type: none"> Same as claim 17.
32	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 24 and patentable for at least the same reason.
33	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 24 and patentable for at least the same reason.
34	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 24 and patentable for at least the same reason.
35	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 24 and patentable for at least the same reason.
36	Same as 1, 3-4 and 15	<ul style="list-style-type: none"> Same as 1, 3-4 and 15
37-39	Same as 2-3 and 10	<ul style="list-style-type: none"> Same as 2-3 and 10
40	Same as 36	<ul style="list-style-type: none"> Same as 36
41	Same as 41	<ul style="list-style-type: none"> Same as 41
42	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 40 and patentable for at least the same reasons.
43	Same as claims 1,3,7,15, 19, 24; 20/51-55; 22/44-46	<ul style="list-style-type: none"> Same as claims 1,3,7,15, 19, 24. Unclear how the Examiner can consider the cited passage to relate to treatment; nothing akin to a treatment is disclosed.
44	Same as claim 2	<ul style="list-style-type: none"> Same as claim 2.
45	29/34-53; 5/13-32	<ul style="list-style-type: none"> The passage teaches that each target object corresponds to an individual file; this is akin to the content 15 shown in Fig. 1 as

		<ul style="list-style-type: none"> individual files. No disclosure that any treatment of a target object is provides as a web page. This claim depends from claim and at least the same comments apply.
46	Same as claim 10	<ul style="list-style-type: none"> Same as claim 10
47-48	Same as claims 45-46	<ul style="list-style-type: none"> Same as claims 45-46
49	Same as claims 2, 16, 23,25, 42 and 44	<ul style="list-style-type: none"> Same as claims 2, 16, 23,25, 42 and 44
50	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 1 and patentable for at least the same reasons.
51	Rejection does not reference claim 51	<ul style="list-style-type: none"> No prima facie case of anticipation has been made because the rejection omits to identify the limitation of a treatment in the prior art. To the extent that the Examiner might consider treatment to anything identified as a treatment in rejecting the other claims discussed above, claim 51 is patentable for at least the same reasons.
53	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Depends from claim 51 and patentable for at least the same reasons.
54	Rejection does not reference "treatment".	<ul style="list-style-type: none"> Same as claim 51—no prima facie case of anticipation
55-56	Same as claims 52-53	<ul style="list-style-type: none"> Same as claims 52-53
57	Same as claim 54	<ul style="list-style-type: none"> Same as claim 54
58-59	Same as claims 55-56	<ul style="list-style-type: none"> Same as claim 55-56
60-62	Same as claims 27-28	<ul style="list-style-type: none"> Same as claims 27-28
63	Rejection does not reference "treatment"	<ul style="list-style-type: none"> Same as claim 51—no prima facie case of

		anticipation
64	Rejection does not reference "treatment"	<ul style="list-style-type: none"> Claim 64 depends from claim 1 and is patentable for at least the same reasons; also same comments as claims 1 and 15
65-66	Rejection does not reference "treatment"	<ul style="list-style-type: none"> Claims have claim 11 as a base claim are patentable for at least the same reasons.
67	Rejection does not reference "treatment"	<ul style="list-style-type: none"> Claim depends from claim 66 and is patentable for at least the same reasons.
68	Rejection does not reference "treatment"	<ul style="list-style-type: none"> Claim depends from claim 67 and is patentable for at least the same reasons.
69	Rejection does not reference "treatment"	<ul style="list-style-type: none"> Claim depends from claim 68 and is patentable for at least the same reasons.
70	Rejection does not reference "treatment"	<ul style="list-style-type: none"> Claim depends from claim 69 and is patentable for at least the same reasons.
71	Rejection does not reference "treatment"	<ul style="list-style-type: none"> Claim depends from claim 70 and is patentable for at least the same reasons.
72	Same as claims 1, 15, 24	<ul style="list-style-type: none"> Same as claims 1, 15, 24
73	Rejection does not reference "treatment"	<ul style="list-style-type: none"> Claim depends from claim 24 and is patentable for at least the same reasons.
74	Rejection does not reference "treatment"	<ul style="list-style-type: none"> Claim depends from claim 73 and is patentable for at least the same reasons.
75	Rejection does not reference "treatment"	<ul style="list-style-type: none"> Claim depends from claim 24 and is patentable for at least the same reasons.
76	Same as claims 2-3, 63, 65-	<ul style="list-style-type: none"> Same as claims 2-3,

	66	63, 65-66
77	Same as claim 2	• Same as claim 2
78	Rejection of this independent claim does not reference "treatment; same as claims 63 and 65-67	• Same as claims 63 and 65-67—no prima facie case of anticipation
79-80	Same as claims 11, 15, 50, 65-67	• Same as claims 11, 15, 50, 65-67
81-82	Same as claims 65-76	• Same as claims 65-76